UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,699	10/23/2003	Hansen-H. Tsai	MR957-1407	9730

4586 7590 03/06/2007

ROSENBERG, KLEIN & LEE
3458 ELLICOTT CENTER DRIVE-SUITE 101
ELLICOTT CITY, MD 21043

EXAMINER	
LIEW, ALEX KOK SOON	
ART UNIT	**PAPER NUMBER**
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/690,699	TSAI ET AL.	
	Examiner	Art Unit	
	Alex Liew	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 – 6, 8 and 11 – 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Anderson (US pat no 6,867,051).

With regards to claim 1, Anderson discloses an apparatus for quantifying a immunochromatographic test (see col. 6 lines 66 – 67 to col. 7 lines 1 – 11), comprising

an image acquiring unit including optical image acquiring devices for acquiring a digital image of a immunochromatographic test (see col. 6 lines 66 – 67 to col. 7 lines 1 – 11 – an image is generated from the strip, which are captured by CCD, col. 8 lines 10 – 15),

a characteristics acquiring unit for selectively acquiring at least one characteristics acquiring at least one characteristics of a digital image of a immunochromatographic test according to a series of digital image processing procedures (see col. 26 lines 65 – 67 – the system is programmed to obtain model patterns of the images taken from the strip using curve fitting techniques, the patterns of

the image are read as the characteristics of the image and the patterns are compared with reference patterns),

a neutral-network quantifying unit including a plurality of plastic perception sub-networks each used for quantifying main characteristics of a immunochromatographic test according to an algorithm of back propagation (see col. 31 lines 6 – 39 – back propagation are use to train the data, also the hidden layer is the sub-network – is use to reduce image data patterns, such as the mathematical coefficients),

a storage unit for storing a plurality of parameters therein , which include a plurality of characteristics related values, a plurality of weights and a plurality of critical values of the plastic perception sub-networks and system related parameters (see col. 31 lines 31 – 34 – includes the weighted sum, the weight coefficients must be stored in a storage medium so new input image can use the neural networks after training process, see col. 26 lines 62 – 65 – the coefficients of the mathematical function are other system parameters),

an output unit for displaying results of the quantification performed by the neural-network quantifying unit (see fig 6 – the LCD display shows the results, col. 18 lines 41 – 46), thereby capable of acquiring main characteristics of a immunochromatographic test through the optical image acquiring devices, quantifying the main characteristics through the neural-network quantifying unit and displaying results of quantification through the output unit (see col. 32 lines 15 – 23 – the classification of the sample determines the validity of the sample).

Novelty are not derive from how fast a system process an algorithm / procedure, it is the algorithm / procedures / steps of a method, system, apparatus and / or program stored in a storage medium that defines novelty. Herein the current rejection for claim 1, immunochromatographic is read as rapid immunochromatographic.

With regards to claim 2, Anderson discloses an apparatus for quantifying an immunochromatographic test as claimed in claim 1, wherein the main characteristics of a immunochromatographic test include test line, control line which are quantifiable image characteristics of a rapid immunochromatographic test (see col. 38 lines 48 – 53).

With regards to claim 3, Anderson discloses an apparatus for quantifying an immunochromatographic test as claimed in claim 1, wherein the plastic perception sub-networks are built through a plurality of weights and critical values (see col. 31 lines 30 – 33).

With regards to claim 4, Anderson discloses an apparatus for quantifying an immunochromatographic test as claimed in claim 1, wherein the image acquiring unit is a charge coupled device CCD image acquiring device (see col. 8 lines 10 – 15).

With regards to claim 5, Anderson discloses an apparatus for quantifying an immunochromatographic test as claimed in claim 1, wherein the image acquiring unit is an optical scanning device (see col. 10 lines 31 – 56).

With regards to claim 6, Anderson discloses an apparatus for quantifying a immunochromatographic test as claimed in claim 1, wherein the characteristics acquiring unit processes and calculates through a microprocessor capable of carrying out high speed logical arithmetical operation (see col. 18 lines 36 – 40 and fig 6).

With regards to claim 8, Anderson discloses an apparatus for quantifying a immunochromatographic test as claimed in claim 1, wherein the neural-network quantifying unit processes and calculates through a microprocessor capable of carrying out high speed logical arithmetical operation (see col. 18 lines 36 – 40 and fig 6 – all neural network processing, cited in col. 31, are done within the processor).

With regards to claim 11, Anderson discloses an apparatus for quantifying a immunochromatographic test as claimed in claim 1, wherein the characteristics acquiring unit, the neural-network quantifying unit and the storing unit are integrated into a single integrated circuit (see fig 6 – all data analysis and results are stored in the storage in the figure).

With regards to claim 12, see the rationale and rejection for claim 1.

With regards to claim 13, see the rationale and rejection for claim 4.

With regards to claim 14, see the rationale and rejection for claim 5.

With regards to claim 15, see the rationale and rejection for claim 1. In addition, Anderson's, col. 32 lines 15 – 24, positive results is read as normal condition and negative results is read as abnormal condition.

With regards to claim 16, see the rationale and rejection for claim 2.

With regards to claims 17 and 18, see the rationale and rejection for claim 1.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson ('051) as applied to claim 1 further in view of Gaborski (US pat no 5,052,043).

With regards to claim 7, Anderson discloses all of the claim elements / features as discussed above in rejection for claim 1 and incorporated herein by reference, but fails to disclose calculating through digital signal processor. Anderson only teach calculating unit being a processor only (see col. 18 lines 36 – 40). However, Gaborski discloses processing and calculates through a digital signal processor (see col. 10 lines 50 – 56). One skill in the art would use a digital signal processor because to process data and algorithms at a higher speed to save time.

With regards to claim 9, see the rationale and rejection for claim 7.

3. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson ('051) as applied to claim 1 further in view of official notice (MPEP 2144.03).

With regards to claim 10, Anderson discloses all of the claim elements / features as discussed above in rejection for claim 1 with an output unit includes a liquid crystal display (see col. 25 lines 42 – 43) and plurality if light emitting diodes (see col. 6 lines 1 – 4 with figures 11 and 17), but does not disclose output unit being a loud speaker. It is well known in the art to use speakers as an output unit to hear plurality of sound waves (MPEP 2144.03). One skill in the art would use a speaker as output results indicator because to let those who are blind or have poor vision hear the plurality of results from the speaker, improving the flexibility of the image processing system.

With regards to claim 19, see the rationale and rejection for claim 10.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Liew whose telephone number is (571)272-8623. The examiner can normally be reached on 9:30AM - 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alex Liew
AU2624
3/1/07

JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER